

84098

Work Order ID 85389

June-07-12 9:26:06 AM

85389

Page 1

Item ID: D412-664-203TRN

Accept

N900040100

Setup

Start

NS1

Revision ID:

Item Name: Crosstube Turning Detail

Start Date: 07/06/2012 Start Qty: 1.00 ***1***Required Date: 21/06/2012 Req'd Qty: 1.00 ***1***

Reference:

Cust Item ID:

Customer:

Approvals: Process Plan: *MLJ*Date: *12/06/07* Pooling:

Date:

Run

Start

NR1

QC:

Date: SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
----------	--------------	---------	--------	--------------	---------------	---------------	------------------	----------------

D412-664-243	Rev E(DEO)	0.00						
--------------	------------	------	--	--	--	--	--	--

100	MORI SEIKI CNC LATHE LARGE	0.00						
-----	----------------------------	------	--	--	--	--	--	--

100	Memo	0.00						
--------------	------	------	--	--	--	--	--	--

Mori Seiki	1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA166							
------------	--	--	--	--	--	--	--	--

Mori Seiki CNC Lathe Large	2-Turn first side as per Folio FA166							
----------------------------	--------------------------------------	--	--	--	--	--	--	--

	3- File transition lines smooth.							
--	----------------------------------	--	--	--	--	--	--	--

FOLIO REV: <i>A</i>	DWG REV: <i>F</i>							
---------------------	-------------------	--	--	--	--	--	--	--

110	QC1- Inspect dimensions to dimension sheet	0.00						
-----	--	------	--	--	--	--	--	--

110	Memo	0.00						
--------------	------	------	--	--	--	--	--	--

QC								
----	--	--	--	--	--	--	--	--

Quality Control								
-----------------	--	--	--	--	--	--	--	--

*MM.L
12/06/16**MM.L
12/06/16*

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 85389

June-07-12 9:26:06 AM

85389

Page 2

Item ID: D412-664-203TRN**Accept*****N900040100*****Setup****Start*****NS1*****Revision ID:****Item Name:** Crosstube Turning Detail**Start Date:** 07/06/2012 **Start Qty:** 1.00 ***1*****Required Date:** 21/06/2012 **Req'd Qty:** 1.00 ***1*****Reference:****Cust Item ID:****Customer:****Approvals:** **Process Plan:****Date:****Tooling:****Date:****Run****Start*****NR1*****QC:****Date:****SPC (Y/N):****Date:****Stop*****NR2*****Sequence ID/
Work Center ID**

120

120

Mori Seiki

Mori Seiki CNC Lathe Large

**Operation
Description**

MORI SEIKI CNC LATHE LARGE

**Set Up/
Run Hours**

0.00

Tool ID**Tool #****Plan
Code****Accept
Qty****Reject
Qty****Reject
Number****Insp.
Stamp**

1 8

mml

12/06/17

130

130

QC

Quality Control

QC1- Inspect dimensions to dimension sheet

0.00

Memo

0.00

1 8

12/06/17

PTO

mml

140

140

QC

Quality Control

QC8- Inspect parts - second check

0.00

Memo

0.00

1 8

12-6-18

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: John Date: 12/06/28

QA Closed: C Date: 12/6/29

Work Order:	85389	DISPOSITION	Rework Scrap Use-as-is Work Order Update	Skid-tube Machining Thermoforming Large Fab	Crosstube Small Fab Finishing Composite	AGAINST DEPARTMENT/PROCESS	Prod. Eng. Coor. Rec/Store/Packaging Supplier Other	Engineering Quality
Part No.	D412-664-203TRN							
NCR No.	121541							

FAULT CATEGORY

Landing Gear	Hardware	General	
<input type="checkbox"/> Bending Passes Below Min	<input type="checkbox"/> Breaking	<input type="checkbox"/> Burrs	<input type="checkbox"/> Maintenance
<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> Missing	<input type="checkbox"/> Contamination	<input type="checkbox"/> Mislabeled
<input type="checkbox"/> Cracks	<input type="checkbox"/> Size/Length	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Off-Set
<input type="checkbox"/> Crushed/Crimp at Bending	<input type="checkbox"/> Spinning	<input type="checkbox"/> Documentation/Data	<input type="checkbox"/> Orientation Misread
<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Threading	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Calibration
<input type="checkbox"/> Other	<input type="checkbox"/> Wrong	<input checked="" type="checkbox"/> Inspection Incomplete	<input type="checkbox"/> Out of Sequence
<input type="checkbox"/> Positioned Wrong		<input type="checkbox"/> Inspection Unqualified	<input type="checkbox"/> Outside Dimensions
<input type="checkbox"/> Ripples on Inner Bend	<input type="checkbox"/> Misaligned	<input type="checkbox"/> Instructions Incomplete/Unclear	<input type="checkbox"/> Over/Under tolerance
<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Ovalized	<input type="checkbox"/> Jigs/Fixtures/Tooling	<input type="checkbox"/> Part Lost
<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Over/Undersized	<input type="checkbox"/> Kit Incorrect	<input type="checkbox"/> Part Moved
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Too Many	<input type="checkbox"/> Kit Missing	<input type="checkbox"/> Raw Material
			<input type="checkbox"/> Set-up
			<input type="checkbox"/> Supplier
			<input type="checkbox"/> Temperature/Cure
			<input type="checkbox"/> Weld
			<input type="checkbox"/> Wrong Stock Pulled
			<input type="checkbox"/> Other

Work Order ID 85389

June-07-12 9:26:06 AM

85389

Page 3

Item ID: D412-664-203TRN

Accept

N900040100

Setup

Start

NS1

Revision ID:

Item Name: Crosstube Turning Detail

Start Date: 07/06/2012 **Start Qty:** 1.00

1

Cust Item ID:

Required Date: 21/06/2012 **Req'd Qty:** 1.00

1

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

**Sequence ID/
Work Center ID**

145

145

Crosstubes

**Operation
Description**

Memo

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

0.00

145

Crosstubes

0.00

Crosstubes

Memo

GRIND ONLY TRANSITION LINES SMOOTH LONGITUDE WAY.

150

150

HandFXtube

Hand Finishing Crosstubes

Crosstubes Chemical Conversion

Memo

0.00

145

0.00

160

160

QC

Quality Control

QC7-Inspect Chemical Conversion Coat

Memo

0.00

145

0.00

Ray 12-6-20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng .	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 85389***85389***

June-07-12 9:26:06 AM

Page 4

Item ID: D412-664-203TRN

Accept

N900040100

Setup

Start

NS1

Revision ID:

Item Name: Crosstube Turning Detail

Stop

NS2Start Date: 07/06/2012 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 21/06/2012 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

170

170

Packaging

Packaging

0.00

RM 12-6-20

Packaging

Memo

0.00

Identify and stock in kanban rack
Location: LG

180

180

QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

12/6/2198 12/6/2198

12-06-20

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

June-07-12 9:26:10 AM

Work Order ID: 85389

Parent Item: D412-664-203TRN

Parent Item Name: Crosstube Turning Detail

85389
D412-664-203TRN

Start Date: 07/06/2012

Required Date: 21/06/2012

Start Qty: 1.00

Required Qty: 1.00

Comments:
 IPP Rev:A 08-03-06 new issue DD verified by: eec
 IPP Rev B 08.04.02 Removed polish EC verified by: DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6009-129		Manufactured	No			120	Each	23.0000	1	1			**

D6009-129

Crosstube Material

Location	Loc Qty	Loc Code
LG <i>(69801)</i>	23 23	<u> </u> <u> </u> <i>L</i>

man L
12/06/16

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	85389
Description: Crosstube Assembly (412 High Aft)	Part Number:	D412-664-243
Inspection Dwg: D412-664-243 Rev: E		Page 1 of 1

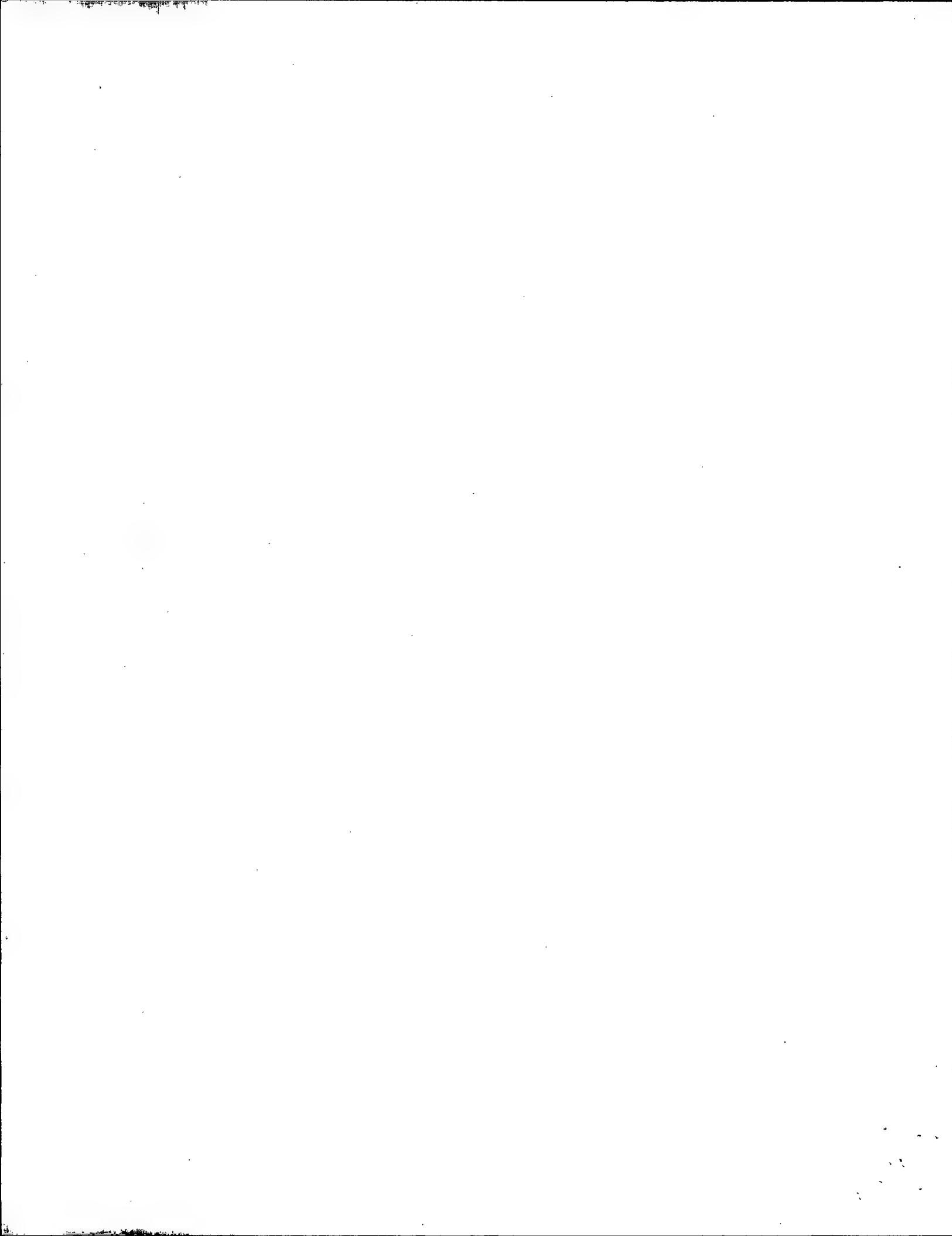
FIRST ARTICLE INSPECTION CHECKLIST

First Article Prototype

Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.684	+0.005/-0.000	2.687	/	vern	CWR -08
	2.748	+0.005/-0.000	2.751	/		
	2.884	+0.005/-0.000	2.888	/		
	3.019	+0.005/-0.000	3.023	/		
	3.163	+0.005/-0.000	3.166	/		
	3.308	+0.005/-0.000	3.312	/		
	3.429	+0.005/-0.000	3.429	/		
	2.990	+0.005/-0.000	2.992	/		
	2.618	+0.005/-0.000	2.622	/		
	0.200	+/-0.010	.200	/	vern	CWR -08
	R0.063	+/-0.010	.063	/	RG	
	R0.500	+/-0.010	.500	/		
	4.971	+/-0.030	4.971	/	vern	CWR -08
SIDE B	2.684	+0.005/-0.000	2.686	/	vern	CWR -08
	2.748	+0.005/-0.000	2.750	/		
	2.884	+0.005/-0.000	2.887	/		
	3.019	+0.005/-0.000	3.022	/		
	3.163	+0.005/-0.000	3.164	/		
	3.308	+0.005/-0.000	3.312	/		
	3.429	+0.005/-0.000	3.430	/		
	2.990	+0.005/-0.000	2.991	/		
	2.618	+0.005/-0.000	2.622	/		
	0.200	+/-0.010	.200	/	vern	CWR -08
	R0.063	+/-0.010	.063	/	RG	
	R0.500	+/-0.010	.500	/		
	4.971	+/-0.030	4.971	/	vern	CWR -08
	124.100	+/-0.020	124.100	/	tape	SHG -28

Measured by:	gmgm L	Audited by:	D	Prototype Approval:	N/A
Date:	12/06/16	Date:	12-6-16	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	04.06.16	New Issue (P/O D412-664-203)	KJ/JLM	
B	06.03.09	Dwg Rev updated	KJ/JLM	
C	07.05.08	Tolerance updated for dimension 4.971	KJ/JLM	
D	10.02.02	Dimension 124.100 was 124.09	KJ	



DART AEROSPACE LTD

Work Order:

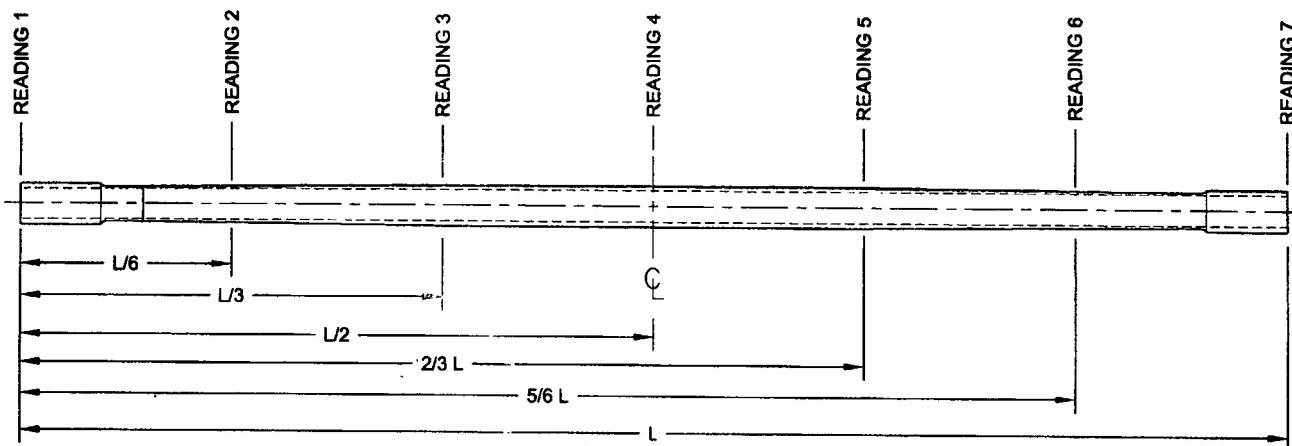
Description: Crosstube Assembly (205/212 High Aft)

Part Number:

D212-664-241

Inspection Dwg: D212-664-241 Rev: D

Page 2 of 2

WALL THICKNESS MEASUREMENT

Location	WALL THICKNESS MEASUREMENT (IN)				Deviation Δw (max-min)	TOLERANCE
	w1	w2	w3	w4		
READING 1 L= 0"	.355	.371	.375	.390	.035	
READING 2 L= 20 "	.313	.317	.314	.308	.009	
READING 3 L= 40 "	.475	.475	.481	.478	.006	
READING 4 L=	CAN'T MEASURE	OK	Q12/16/25			0.062"
READING 5 L= 40 "	.469	.476	.488	.479	.019	
READING 6 L= 20 "	.297	.317	.331	.312	.034	
READING 7 L=	.388	.381	.371	.381	.023	

Calibration Result

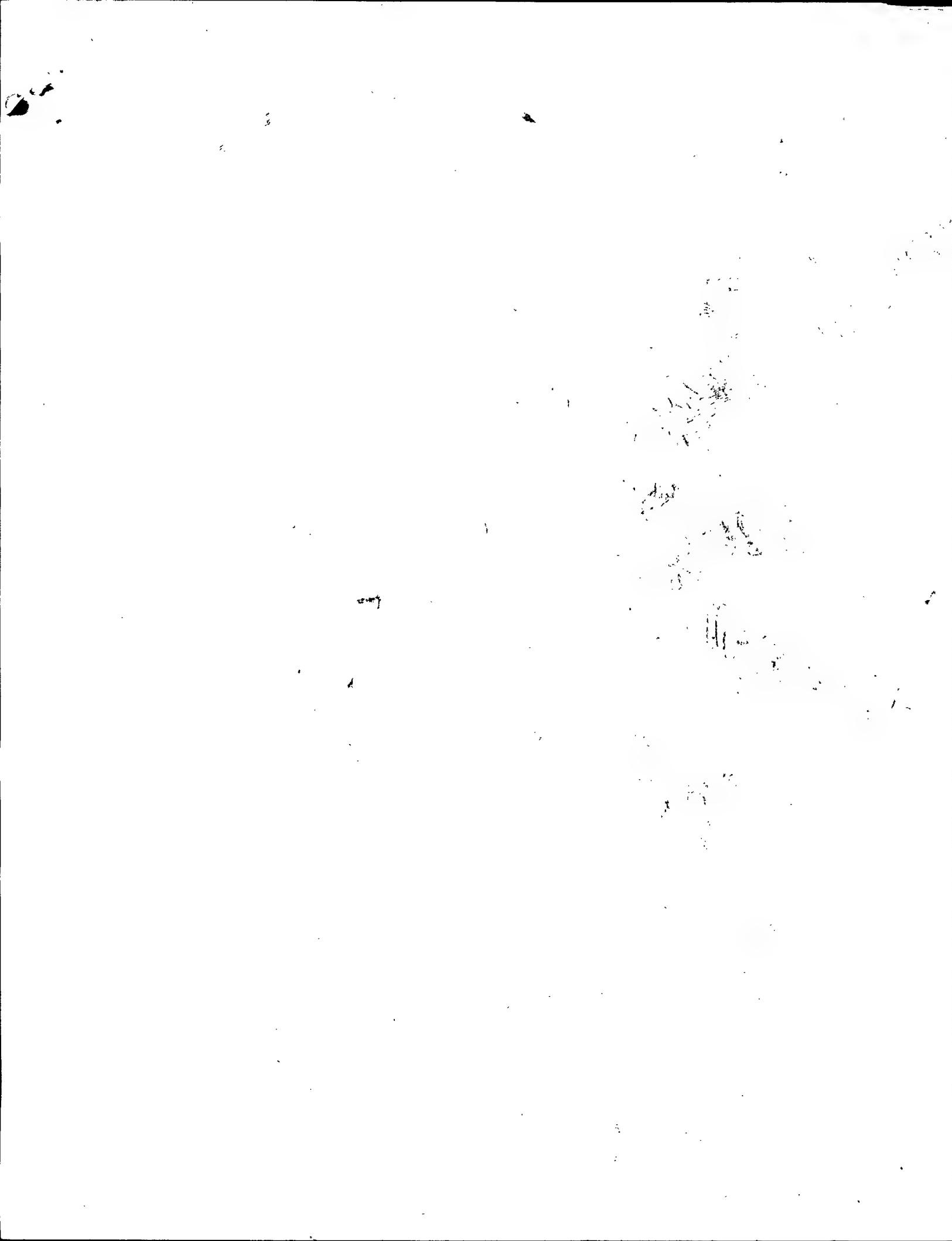
Actual Block Thickness: 100-500Sitescan 250 Measured Thickness: 100-500

Measured by:	KC
Date:	12-6-20

Audited by:	DP
Date:	12-6-18

Preliminary Approval:	
Date:	

Rev	Date	Change	Revised by	Approved
A	05.04.27	New Issue (P/O D412-664-201)	KJ/JLM	
B	06.03.09	Tolerance for 5.237 w \pm 0.001	KJ/JLM	
C	07.05.08	Dwg Rev. updated	KJ/JLM	
D	10.08.03	Dimension 124.362 was 124.36	KJ	
E	12.06.04	Wall thickness form added	KJ	JK



Item	Qty	Part Number	Description
1	X	D412-664-243	CROSSTUBE ASSEMBLY (412 HIGH AFT)
2	1	D6009-129	CROSSTUBE
3	2	D3595-063-570	RUBBER CUSHION
4	1	D2896-1	SUPPORT
5	2	D3189-1	CHAFING SHIELD
6	2	D2856-600-1009	ABRASION STRIP
7	4	MS21920-28	CLAMP
8	2	MS21920-30	CLAMP (OR MS21920-32)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC 299-947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6009-129
FINISHED LENGTH = 124.100±0.020 (BEFORE BENDING/TRIMMING)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D412-664-243" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 47.0 lbs (PER IIN-0212-664)
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART, BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2896-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2896-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-30 CLAMPS (OR -32) WITH D3595-063-570 RUBBER CUSHIONS TO SECURE THE D2896-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE ENSURE CLAMPS ARE OPPOSITE OF CROSSTUBE SUPPORT.
- 14) INSTALL D2856-600-1009 ABRASION STRIPS WITH A 0.13 REF GAP ON BOTTOM SIDE OF CROSSTUBE PER QSI 035
- 15) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 16) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT

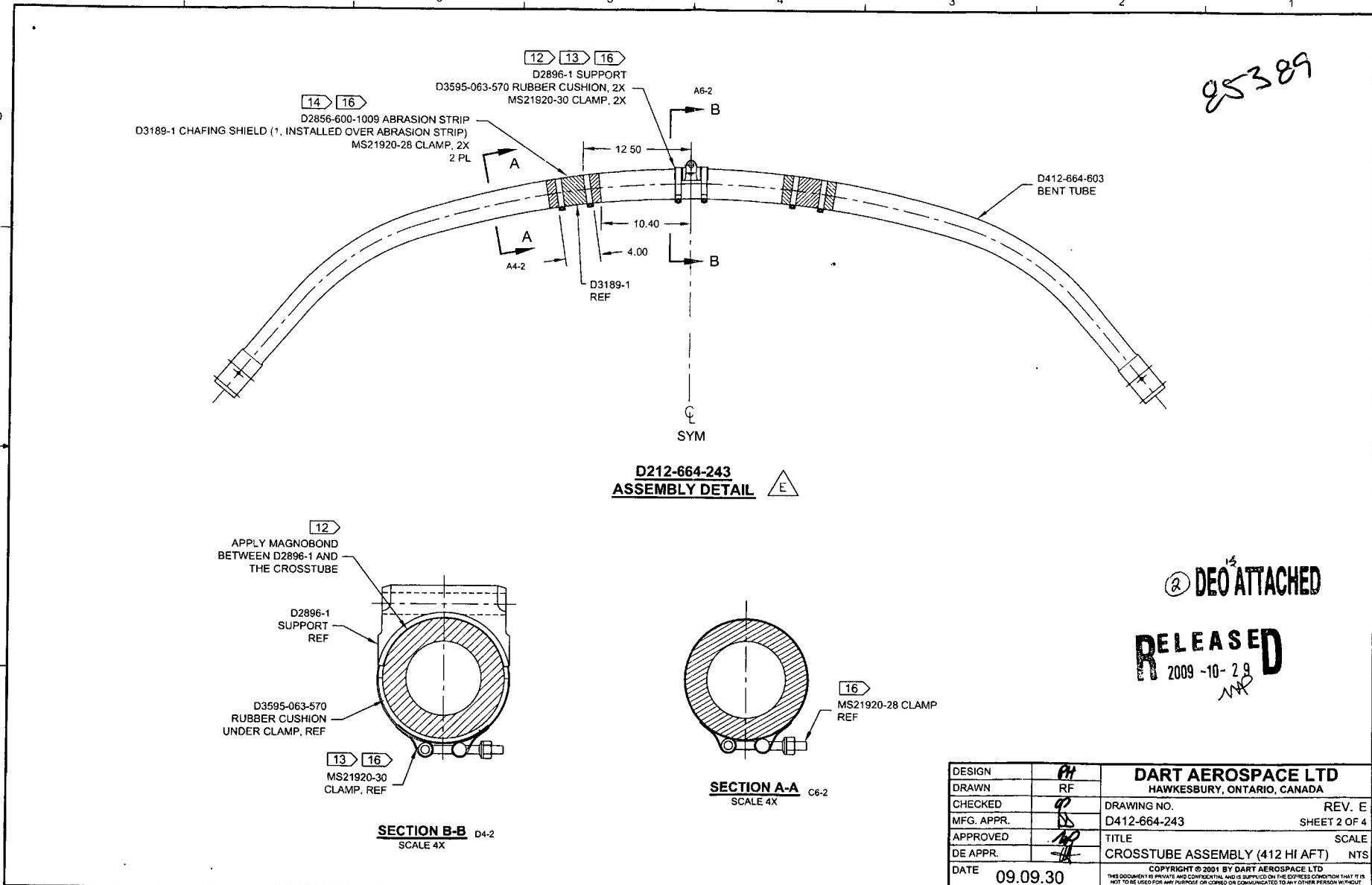
WITHOUT NOTICE
WORK ORDER
NO. 85389 MLC
12/06/07

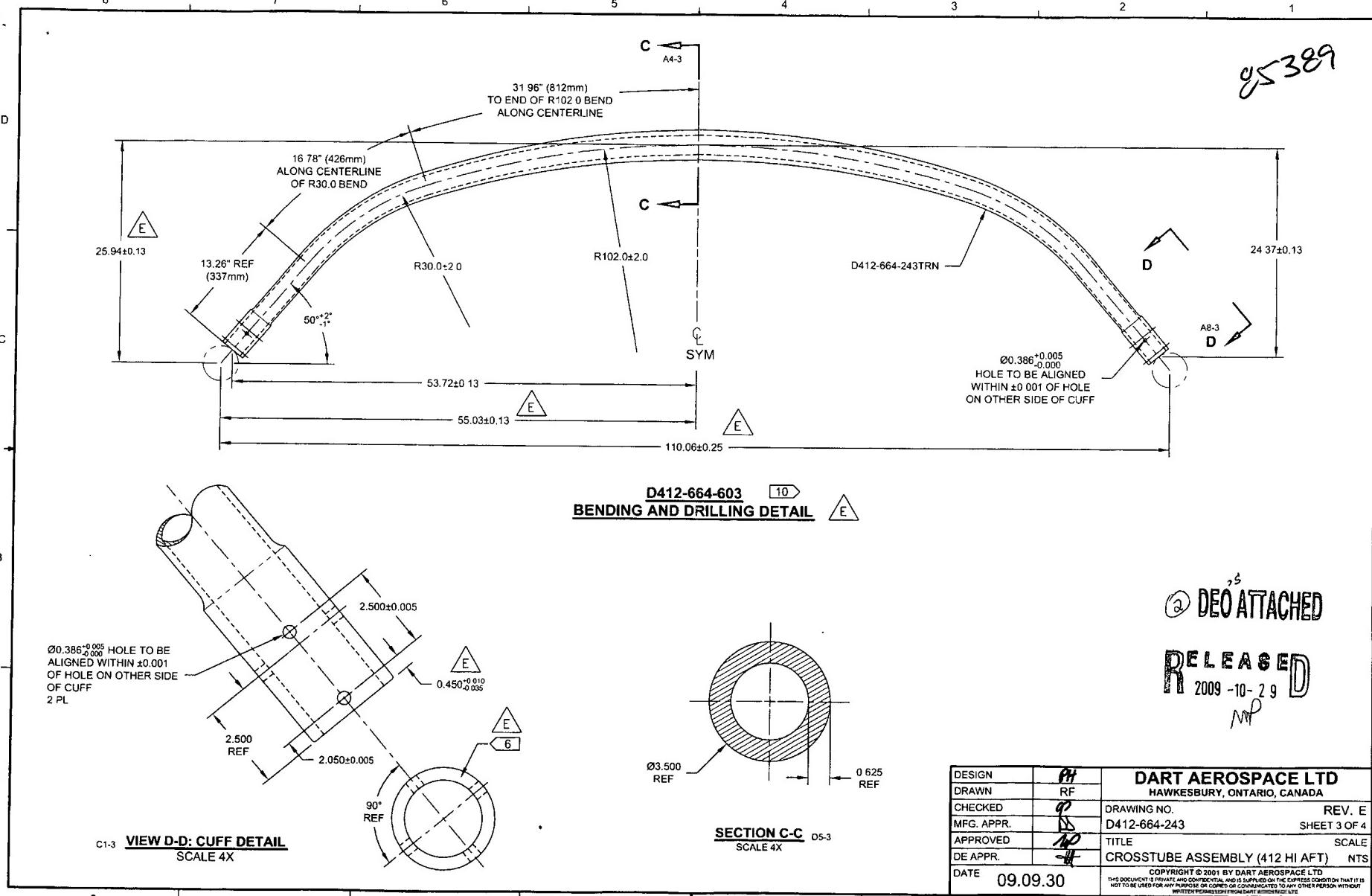
② DEO ATTACHED

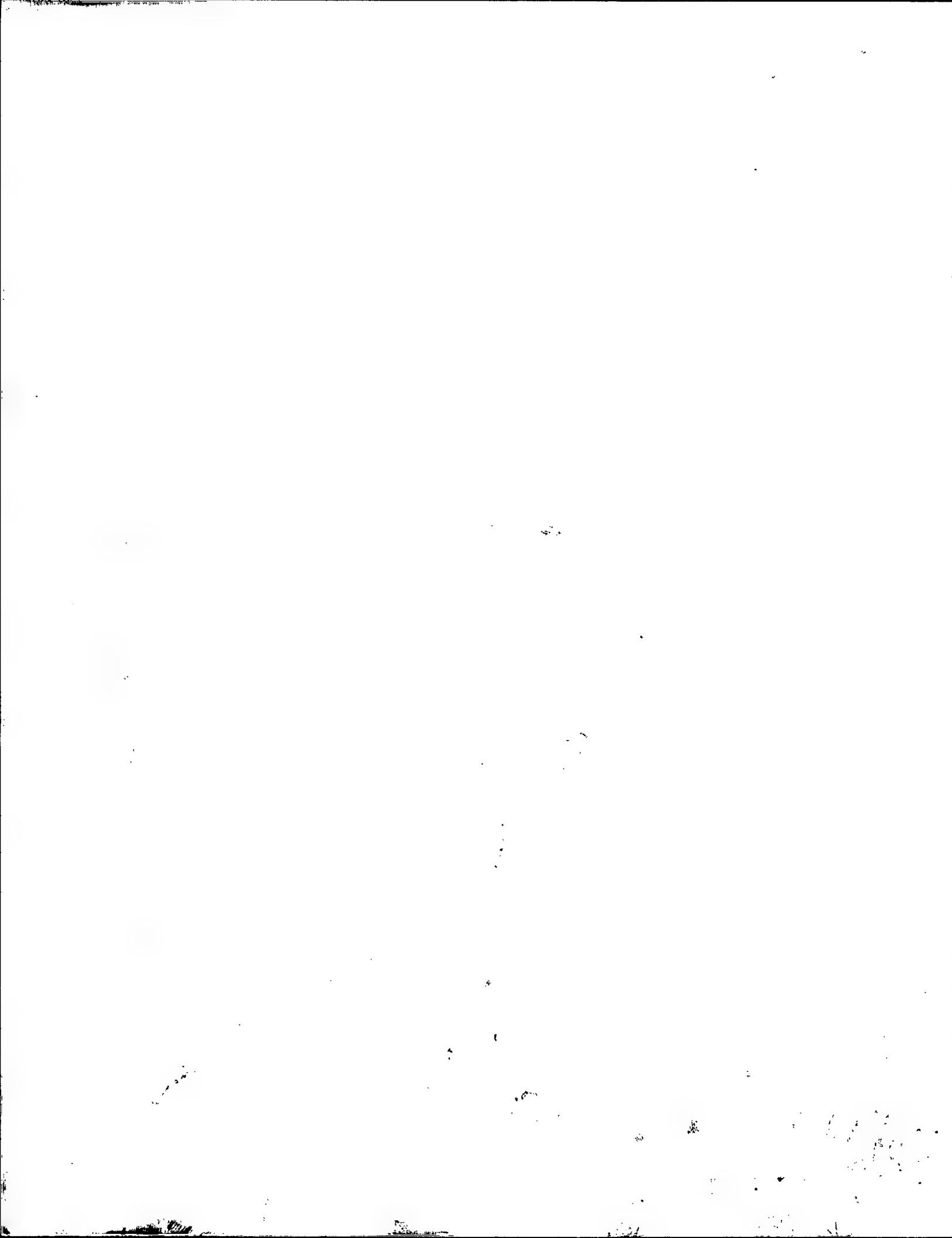
RELEASED
2009-10-29
WV

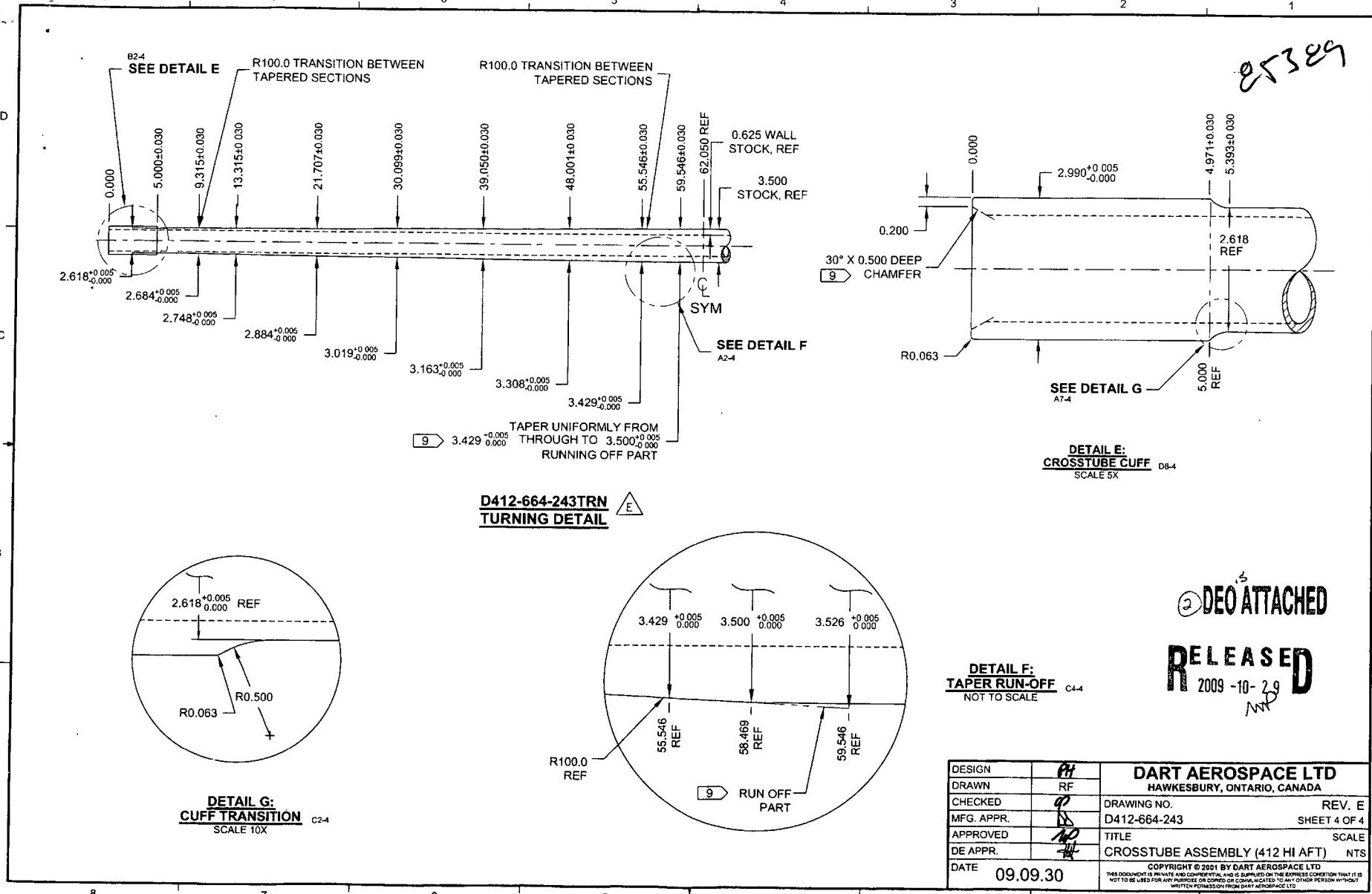
E	REFORMAT/REVISE GENERAL NOTES; REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. RELOCATED FLAG #6 PER PAR 08-046 (ZN A6-3). ADD TOLERANCE (ZN B6-3, C4-3, C8-3 & C5-3); MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	09.09.30
D	REMOVE D2732-058, CHANGE TO D3595-063-570	PH	07.03.09
C	REMOVE D2856-600-1087, ADD D2732-058 & MAGNOBOND 6398. MS21920-32 WAS MS21920-30	MB	06.10.27
B	ADD HOLES FOR COMPATABILITY WITH BH7/AA SKIDTUBES	PH	05.02.04
A	NEW ISSUE	PH	01.10.17
REV.	DESCRIPTION	BY	DATE
DESIGN	Pt	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF	DRAWING NO. D412-664-243	
CHECKED	PP	REV. E SHEET 1 OF 4	
MFG. APPR.	DS	TITLE CROSSTUBE ASSEMBLY (412 HI AFT) NTS	
APPROVED	MM	SCALE	
DE APPR.	MM	DATE 09.09.30	

COPYRIGHT © 2001 BY DART AEROSPACE LTD.
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS
NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT
WRITTEN PERMISSION FROM DART AEROSPACE LTD.









(2) DEO ATTACHED

RELEASED 2009-10-29 M

DESIGN	RF	DART AEROSPACE LTD
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA
CHECKED	PP	DRAWING NO.
MFG. APPR.	DS	REV. E
APPROVED	MM	SHEET 4 OF 4
DE APPR.	MM	TITLE
DATE	09.09.30	SCALE
		CROSSTUBE ASSEMBLY (412 HI AFT) NTS
COPYRIGHT © 2001 BY DART AEROSPACE LTD. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY OTHER PURPOSE OR SHOWN TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.		

DRAWING NO. D412-664-243	TITLE CROSSTUBE ASSEMBLY (412 HI AFT)	REV. E	DART AEROSPACE LTD ENGINEERING ORDER	D.E.O. NO. D412-664-243-E-1	SHEET NO. SHEET 1 OF 2	SCALE NTS
DRAWN <i>MP</i>	CHECKED <i>MP</i>	MFG. APPR. <i>E</i>	APPROVED <i>MP</i>	DE APPR. <i>MP</i>		
DATE 11.03.31	DATE 11/03/31	DATE 11.03.31	DATE 11/03/31	DATE 11.03.31	DATE 11.03.31	DATE 11.03.31

PURPOSE:

REMOVED ABRASION STRIP IN FAVOR OF A THIN LAYER OF PROSEAL 890.

05389

CHANGE:

PARTS LIST IS AMENDED AS FOLLOWS:

IS:

Item	Qty -243	Part Number	Description
6	0	D2856-600-1009	ABRASION STRIP

WAS:

6	2	D2856-600-1009	ABRASION STRIP
---	---	----------------	----------------

NOTES 2 AND 14, SHEET 1 ARE AMENDED AS FOLLOWS:

IS:

- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
MASK UNDERSIDE OF CROSSTUBE AS SHOWN (HATCHED AREA)
PAINT OUTSIDE PER DART QSI 005 4.2
AFTER PAINTING, APPLY CLEAR COAT ON HATCHED AREA
- 14) APPLY A THIN COAT OF PROSEAL 890 ON INSIDE CONCAVE SURFACE OF D3189-1 CHAFING SHIELD AND LET CURE PER MANUFACTURER'S INSTRUCTIONS. INSTALL PROSEALED D3189-1 CHAFING SHIELD ONTO CROSSTUBE BY APPLYING A THIN COAT OF PROSEAL 890 ONTO CROSSTUBE. BE SURE TO ELIMINATE ANY AIR GAPS.

WAS:

- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 14) INSTALL D2856-600-1009 ABRASION STRIPS WITH A 0.13 REF GAP ON BOTTOM SIDE OF CROSSTUBE PER QSI 035.

RELEASED
2011-04-07
MP

DRAWING NO. D412-664-243	TITLE CROSSTUBE ASSEMBLY (412 HI AFT)	REV. E	DART AEROSPACE LTD ENGINEERING ORDER	D.E.O. NO. D412-664-243-E-1	SHEET NO. SHEET 2 OF 2	SCALE NTS
DRAWN <i>[Signature]</i>	CHECKED <i>[Signature]</i>	MFG. APPR. <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DE APPR. <i>[Signature]</i>		
DATE 11.03.31	DATE 11.03.31	DATE 11.03.31	DATE 11.03.31	DATE 11.03.31	DATE 11.03.31	105385

IS:

D3189-1 CHAFING SHIELD (1, INSTALLED OVER PROSEAL 890)
MS21920-28 CLAMP, 2X
2 PL

D412-664-603
BENT TUBE

2.00
1.00

16 < 14

WAS:

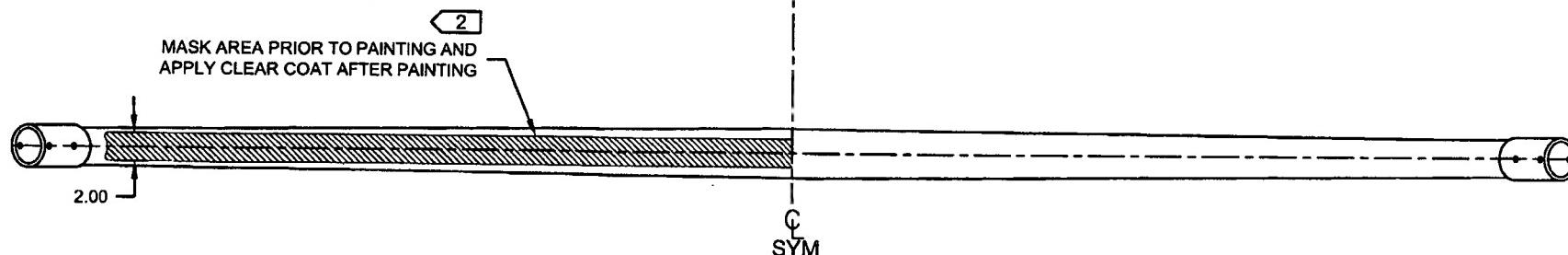
14 > 16

D2856-600-1009 ABRASION STRIP
D3189-1 CHAFING SHIELD (1, INSTALLED OVER ABRASION STRIP)
MS21920-28 CLAMP, 2X
2 PL

D3189-1
REF

D412-664-243
ASSEMBLY DETAIL

RELEASED
2011-04-07
[Signature]





DRAWING NO. D412-664-243	TITLE CROSSTUBE ASS'Y (412 HI AFT)	REV. E	DART AEROSPACE LTD ENGINEERING ORDER	D.E.O. NO. D412-664-243-E-2	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>q</i>	CHECKED <i>AS</i>	MFG. APPR. <i>E</i>	APPROVED <i>MP</i>	DE APPR. <i>#</i>		
DATE 11.09.07	DATE 11.09.19	DATE 11.09.19	DATE 11.09.19	DATE 11.09.19	DATE 11.09.19	

PURPOSE:

REPLACE MAGNOBOND WITH 3M DP460 SCOTCH-WELD EPOXY ADHESIVE

GS 389

CHANGE:

IS:

Item	Qty -243	Part Number	Description
9	A/R	SCOTCH-WELD DP460	EPOXY ADHESIVE, 3M SCOTCH-WELD

WAS:

9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
---	-----	----------------	---

NOTE 12 & 16, SHEET 1 IS AMENDED AS FOLLOWS:

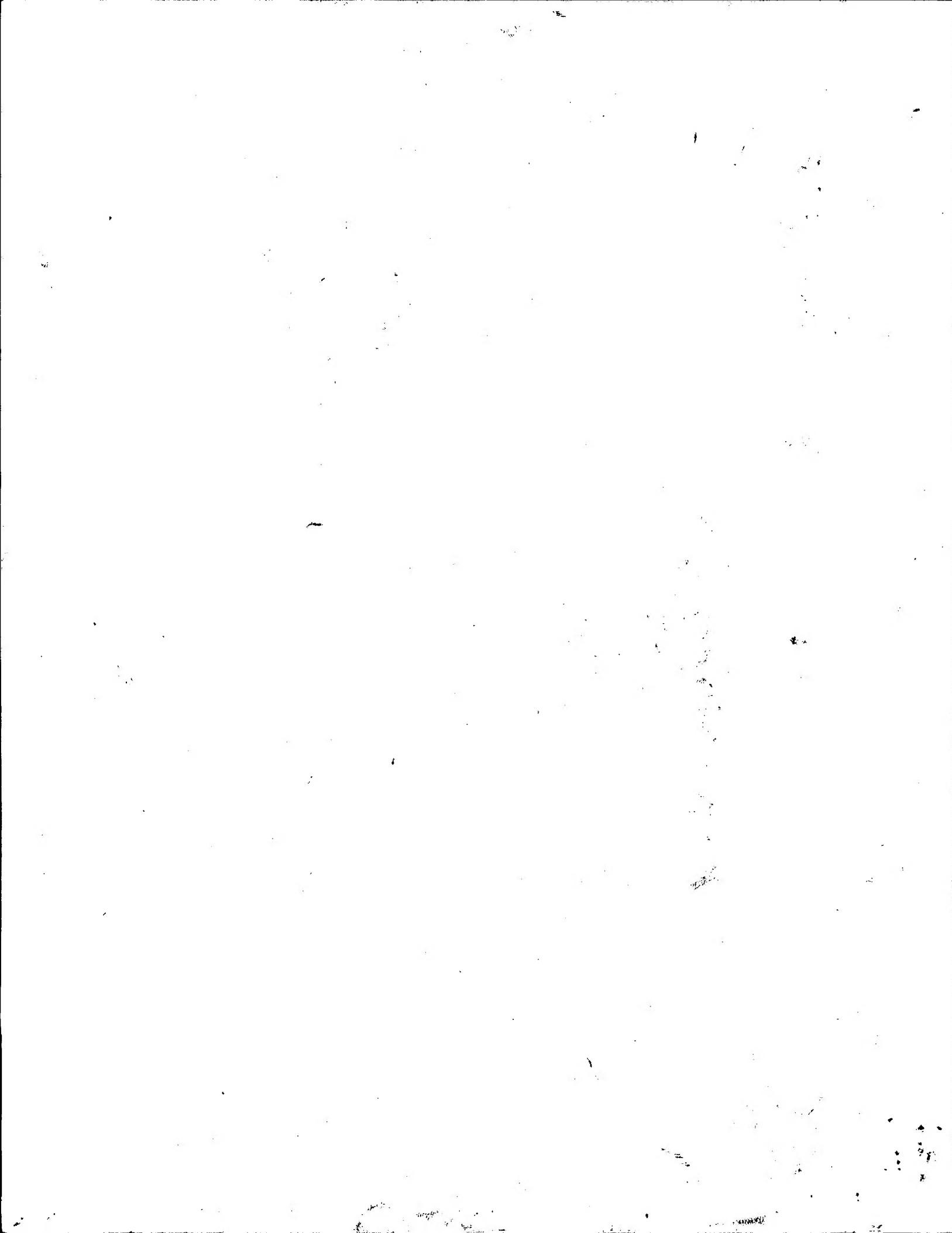
IS:

- 12) INSTALL D2896-1 CENTER SUPPORT USING A 0.04" TO 0.07" THICK LAYER OF SCOTCH-WELD DP460 PER QSI 015. LET CURE FOR 24 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 16) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER ADHESIVE HAS CURED FOR 24 HOURS.

WAS:

- 12) INSTALL D2896-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2896-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 16) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

RELEASED
2011-09-29
MP



EXTRUSION INSPECTION SHEET

ULTRA SONIC MEASURMENTS

TUBE #	TOTAL LENGTH	DIA two readings	INSIDE DIA	wall thickness measured w/vern	Straghtness at 12"	Rockwell Reading	LOCATION on tube	R1	R2	R3	R4
1	129.00"	3.495"/3.492"	2.249"	0.612"/0.625"	0.019"	N/A	middle 64.5"	0.631"	0.631"	0.624"	0.624"
2	129.00"	3.500"/3.495"	2.249"	0.612"/0.641"	0.010"	N/A	middle 64.5"	0.630"	0.621"	0.625"	0.632"
3	129.00"	3.490"/3.498"	2.249"	0.615"/0.635"	0.005"	N/A	middle 64.5"	0.633"	0.638"	0.624"	0.618"
4	129.00"	3.491"/3.496"	2.248"	0.623"/0.632"	N/A	N/A	middle 64.5"	0.638"	0.630"	0.616"	0.625"
5	129.00"	3.498"/3.504"	2.250"	0.615"/0.621"	N/A	N/A	middle 64.5"	0.631"	0.624"	0.624"	0.630"
6	129.00"	3.493"/3.494"	2.249"	0.628"/0.612"	N/A	N/A	middle 64.5"	0.621"	0.623"	0.630"	0.623"
7	129.00"	3.491"/3.493"	2.250"	0.616"/0.630"	N/A	N/A	middle 64.5"	0.625"	0.629"	0.627"	0.627"
8	129.00"	3.495"/3.495"	2.249"	0.625"/0.615"	N/A	N/A	middle 64.5"	0.624"	0.623"	0.627"	0.627"
9	129.00"	3.499"/3.498"	2.250"	0.633"/0.613"	0.008"	N/A	middle 64.5"	0.631"	0.641"	0.621"	0.620"
10	129.00"	3.495"/3.501"	2.251"	0.624"/0.618"	N/A	N/A	middle 64.5"	0.619"	0.626"	0.636"	0.637"
11	129.00"	3.497"/3.500"	2.250"	0.625"/0.625"	N/A	N/A	middle 64.5"	0.621"	0.624"	0.632"	0.640"
12	129.00"	3.494"/3.498"	2.252"	0.615"/0.631"	N/A	N/A	middle 64.5"	0.625"	0.629"	0.629"	0.629"
13	129.00"	3.493"/3.495"	2.251"	0.621"/0.615"	N/A	N/A	middle 64.5"	0.631"	0.626"	0.623"	0.628"
14	129.00"	3.491"/3.494"	2.250"	0.620"/0.618"	N/A	N/A	middle 64.5"	0.627"	0.621"	0.626"	0.642"
15	129.00"	3.493"/3.501"	2.246"	0.625"/0.628"	N/A	N/A	middle 64.5"	0.627"	0.630"	0.631"	06.26"
PART # D6009-129		P/O# 14138		BATCH # B69801		Notes:		<i>Suzanne</i>			